

CLAIMS

What is claimed is:

1. A grout composition comprising
 - a) a first mineral filler having an average particle size greater than 160 micrometers and
5 a Mohs hardness less than about 6.5;
 - b) a second mineral filler having an average particle size less than 600 micrometers; and
 - c) an air-dryable polymeric resin in an amount sufficient to bind the first and second
mineral fillers upon drying of the composition.
- 10 2. The composition of claim 1, comprising
 - a) 20% to 40%, by weight, of first mineral filler particles having an average particle size
in the range from 160 to 700 micrometers and a Mohs hardness less than about
6.5;
 - b) 20% to 40%, by weight, of second mineral filler particles having an average particle
15 size in the range from 90 to 120 micrometers; and
 - c) 20% to 35%, by weight, of an air-dryable polymeric resin.
3. The composition of claim 2, wherein at least 80% of the first particles have a size in the
range from 160 to 700 micrometers.
- 20 4. The composition of claim 3, wherein at least 80% of the second particles have a size in the
range from 90 to 120 micrometers.
5. The composition of claim 2, wherein the first mineral filler particles and the second mineral
25 filler particles are particles of the same mineral.
6. The composition of claim 5, wherein the mineral is calcium carbonate.
7. The composition of claim 1, having an overall mineral filler content from 30% to 80% by
30 weight.

8. The composition of claim 7, wherein the overall mineral filler content is from 55% to 65%.
9. The composition of claim 1, comprising from 5% to 70% by weight first mineral filler.
- 5 10. The composition of claim 9, comprising from 20% to 40% by weight first mineral filler.
11. The composition of claim 1, comprising from 5% to 60% by weight second mineral filler.
- 10 12. The composition of claim 11, comprising from 20% to 40% by weight second mineral filler.
13. The composition of claim 1, wherein the composition does not comprise a particulate having an average particle size greater than 100 micrometers and a Mohs hardness greater than
15 about 6.5.
14. The composition of claim 1, wherein the composition does not comprise a particulate having an average particle size greater than 20 micrometers and a Mohs hardness greater than about 6.5.
- 20 15. The composition of claim 1, wherein the average particle size of the first mineral filler is in the range from 185 to 245 micrometers.
16. The composition of claim 1, wherein the Mohs hardness of the first mineral filler is not
25 more than about 6.
17. The composition of claim 1, wherein the Mohs hardness of the first mineral filler is not less than about 2 and not more than about 4.
- 30 18. The composition of claim 1, wherein the first mineral filler comprises a white mineral.

19. The composition of claim 1, wherein the first mineral filler is calcium carbonate.
20. The composition of claim 1, wherein the average particle size of the second mineral filler is
5 in the range from 90 to 120 micrometers.
21. The composition of claim 1, wherein each of the first and second mineral fillers comprise the same mineral.
- 10 22. The composition of claim 1, wherein each of the first and second mineral fillers comprise calcium carbonate.
23. The composition of claim 1, wherein the resin comprises a plurality of polymers.
- 15 24. The composition of claim 1, wherein the resin comprises an acrylic latex polymer.
25. The composition of claim 24, wherein the acrylic latex polymer is selected from the group consisting of homopolymers of acrylate, homopolymers of alpha-methyl acrylate, and copolymers of acrylate and alpha-methyl acrylate.
- 20 26. The composition of claim 24, wherein the resin comprises a plurality of acrylic latex polymers.
27. The composition of claim 1, further comprising a colorant.
- 25 28. The composition of claim 27, wherein the colorant is titanium dioxide.
29. The composition of claim 1, further comprising a polymer-soluble dye.

30. The composition of claim 1, wherein the composition comprises one or more solvents in an amount sufficient to improve the workability of the composition.

5 31. The composition of claim 30, wherein the composition exhibits a viscosity not less than about 240 centipoise.

32. The composition of claim 30, wherein the composition exhibits a viscosity in the range from 240 centipoise to 880 centipoise.

10 33. The composition of claim 1, further comprising an ingredient selected from the group consisting of an antifoam, a wetting agent, a biocide, a thickening agent, a drying rate modulator, and mixtures of these.

15 34. The composition of claim 1, further comprising a fungicide.

35. The composition of claim 1, further comprising propylene glycol in an amount sufficient to modulate the rate of drying of the composition upon exposure to air.

20 36. The composition of claim 1, further comprising an antifoam, a wetting agent, a biocide, a thickening agent, a drying rate modulator, and water.

37. The composition of claim 1, further comprising a water-repelling polymer.

25 38. The composition of claim 37, wherein the water-repelling polymer is selected from the group consisting of fluorochemical polymers, styrene maleic anhydride copolymers, and polyalkylsiloxanes.

39. The composition of claim 1, further comprising a coupling agent for covalently binding at least one of the first and second mineral fillers with a polymer of the polymeric resin.

40. A sealed container containing the grout composition of claim 1, wherein the container has a nozzle for dispensing the composition from the container under pressure.

5 41. The container of claim 40, further comprising a valve in fluid communication with the nozzle, whereby the composition is dispensed through the nozzle upon actuation of the valve.

42. The container of claim 40, further comprising a piston having a face that urges the composition through the nozzle upon application of force pressure to the piston.

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43. The container of claim 42, further comprising a pressurized reservoir exerts pressure on the piston.

15 44. The container of claim 42, wherein the shape of the container is adapted to fit a caulking gun, whereby the caulking gun can be used to apply pressure to the second face of the piston and dispense the composition through the nozzle.

20 45. A pressurized container containing the grout composition of claim 1, wherein the container has a valved outlet in fluid communication with the interior of the container for dispensing the composition from the container under pressure upon actuation of the valve.

46. The container of claim 45, further comprising a nozzle in fluid communication with the outlet of the valve, for directing the dispensed composition.

25 47. The container of claim 46, wherein the nozzle has a dispensing end adapted to fit between ceramic tiles.

48. The container of claim 47, wherein the dispensing end of the nozzle is adapted to fit between ceramic tiles spaced not less than 0.5 inch apart.

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49. The container of claim 47, wherein the dispensing end of the nozzle is adapted to fit between ceramic tiles spaced not less than 0.25 inch apart.

50. The container of claim 47, wherein the dispensing end of the nozzle is adapted to fit
5 between ceramic tiles spaced not less than 0.125 inch apart.

51. The container of claim 47, wherein the dispensing end of the nozzle defines an orifice through which the composition can be dispensed and a shaping edge adjacent the orifice, whereby the surface of the dispensed composition can be shaped by sliding the shaping edge
10 along the surface.

52. The container of claim 51, wherein the shaping edge has a rounded shape for imparting a concave shape to the surface of the dispensed composition when the shaping edge is slid along the surface.
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53. The container of claim 47, wherein the nozzle comprises a stabilizing member for sliding against a tiled surface while dispensing the composition.

54. The container of claim 53, wherein the stabilizing member is unitary with the nozzle.
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55. The container of claim 45, further comprising a piston interposed between a pressurized portion of the container and a second portion of the container, wherein the second portion contains the composition and fluidly communicates with the valve.

56. The container of claim 55, wherein the container has a substantially circular cross-section and the pressurized portion of the container urges the piston axially along the substantially cross-section.
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57. The container of claim 45, wherein the pressurized portion of the container comprises a pressurized bladder contained within the container.
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58. A container having a sealed outlet and a compressible portion and containing the composition of claim 1, whereby the composition is dispensable from the outlet when the outlet is unsealed and the compressible portion is compressed.

5 59. The container of claim 58, wherein the outlet is sealed by a valve.

60. A method of waterproofing a surface having tiles adhered thereto, the method comprising filling interstices between the tiles with a grout composition comprising

- 10 a) a first mineral filler having an average particle size greater than 100 micrometers and
 a Mohs hardness less than about 6.5;
 b) a second mineral filler having an average particle size less than 100 micrometers; and
 c) an air-dryable polymeric resin in an amount sufficient to bind the first and second
 mineral fillers upon drying of the composition.

15 61. The method of claim 60, wherein the interstices are filled by applying the composition to the tiled surface, urging the composition into the interstices, and thereafter removing excess composition not contained within the interstices.

20 62. The method of claim 60, wherein the interstices are filled using an apparatus which comprises a container containing the composition, a pressure source, and a valve in fluid communication with the pressure source and the interior of the container for dispensing the composition from the container upon actuation of the valve.

25 63. The method of claim 62, wherein the apparatus further comprises a nozzle for directing the dispensed composition into the interstices.

64. The method of claim 62, wherein the apparatus is a container having a piston interposed between a pressurized portion of the container and a second portion of the container, wherein the second portion contains the composition and fluidly communicates with the valve.

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65. A method of making a grout composition suitable for packaging in a pressurized dispenser, the method comprising admixing

- a) a first mineral filler having an average particle size greater than 160 micrometers and a Mohs hardness less than about 6.5;
- 5 b) a second mineral filler having an average particle size less than 600 micrometers; and
- c) an air-dryable polymeric resin in an amount sufficient to bind the first and second mineral fillers upon drying of the composition.